

IN THE UNITED STATES DISTRICT COURT  
FOR THE EASTERN DISTRICT OF TEXAS  
TYLER DIVISION

FILED-CLERK  
U.S. DISTRICT COURT  
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BY EASTERN-MARSHALL

AMERICAN VIDEO GRAPHICS, L.P.

Plaintiff,

vs.

1. HEWLETT-PACKARD CO.
  2. DELL COMPUTER CORP.
  3. GATEWAY INC.
  4. INTERNATIONAL BUSINESS  
MACHINES CORP.
  5. TOSHIBA AMERICA, INC.
  6. SONY CORPORATION OF AMERICA
  7. ACER INC.
  8. MPC COMPUTERS LLC
  9. SYSTEMAX, INC.
  10. FUJITSU AMERICA, INC.
  11. MICRO ELECTRONICS CORP.
  12. MATSUSHITA ELECTRIC CORP.  
OF AMERICA
  13. AVERATEC, INC.
  14. POLYWELL COMPANY, INC.
  15. SHARP ELECTRONICS CORP.
  16. TWINHEAD CORP.
  17. UNIWILL COMPUTER  
INTERNATIONAL CORP.
- and
18. JVC AMERICAS CORP.

Defendants.

CIVIL ACTION

JURY TRIAL

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WMS

**COMPLAINT**

Plaintiff American Video Graphics, L.P. ("AVG"), files this complaint for infringement of U.S. Patent Nos. 4,730,185 ("the '185 Patent"); 5,132,670 ("the '670 Patent"); 5,109,520 ("the '520 Patent"); 4,742,474 ("the '474 Patent"); 4,694,286 ("the '286 Patent"); 4,761,642 ("the '642 Patent"); and 4,734,690 ("the '690 Patent") (collectively, "the Patents-in-Suit") under 35 U.S.C. § 271. Copies of each of the Patents-in-Suit are attached as Exhibits A-G.

**PARTIES**

1. Plaintiff AVG is a limited partnership, organized under the laws of the State of Texas. AVG maintains its principal place of business at 505 E. Travis Street, Suite 210, Marshall, Texas 75670.

2. Upon information and belief, Defendant Hewlett-Packard Co. ("HP"), is, and at all relevant times mentioned herein was, a corporation organized and existing under the laws of the State of Delaware, with its principal place of business at 3000 Hanover St. Palo Alto, CA 94304-1112. HP manufactures for sale and/or sells personal computers and workstations to consumers in the United States and, more particularly, in the Eastern District of Texas. HP may be served with service of process by serving a copy of the Complaint on its registered agent for service of process: CT Corp System, 350 N. St. Paul Street, Dallas, TX 75201.

3. Upon information and belief, Defendant Dell Computer Corporation ("Dell"), a subsidiary of Dell, Inc., is, and at all relevant times mentioned herein was, a corporation organized and existing under the laws of the State of Delaware, with its principal place of business at One Dell Way, Round Rock, TX 78682. Dell manufactures for sale and/or sells personal computers and workstations to consumers in the United States and, more particularly, in the Eastern District of Texas. Dell may be served with service of process by serving a copy of the Complaint on its registered agent for service of process: Corporation Service Company, 701 Brazos Street, Suite 1050, Austin, TX 78701.

4. Upon information and belief, Defendant Gateway Inc. ("Gateway"), is, and at all relevant times mentioned herein was, a corporation organized and existing under the laws of the State of Delaware, with its principal place of business at 14303 Gateway Place, Poway, California 92064. Gateway manufactures for sale and/or sells personal computers to consumers

in the United States and, more particularly, in the Eastern District of Texas. Gateway may be served with service of process by serving a copy of the Complaint on its registered agent for service of process CT Corp System, 818 West Seventh Street, Los Angeles, CA 90017.

5. Upon information and belief, Defendant International Business Machines Corporation (“IBM”), is, and at all relevant times mentioned herein was, a corporation organized and existing under the laws of the State of Delaware, with its principal place of business at 1 New Orchard Road, Armonk, NY 10504. IBM manufactures for sale and/or sells personal computers and workstations to consumers in the United States and, more particularly, in the Eastern District of Texas. IBM may be served with service of process by serving a copy of the Complaint on its registered agent for service of process: CT Corp System, 350 N. St. Paul Street, Dallas, TX 75201.

6. Upon information and belief, Defendant Toshiba America, Inc. (“Toshiba”), is, and at all relevant times mentioned herein was, a corporation organized and existing under the laws of the State of Delaware, with its principal place of business at 1251 Avenue of the Americas, Suite 4110, New York, NY 10020. Toshiba manufactures for sale and/or sells personal computers to consumers in the United States and, more particularly, in the Eastern District of Texas. Toshiba may be served with service of process by serving a copy of the Complaint on its registered agent for service of process: CT Corp System, 350 N. St. Paul Street, Dallas, TX 75201.

7. Upon information and belief, Defendant Sony Corporation of America (“Sony”), is, and at all relevant times mentioned herein was, a corporation organized and existing under the laws of the State of Delaware, with its principal place of business at 550 Madison Ave New York, NY 10022-3211. Sony manufactures for sale and/or sells personal computers to

consumers in the United States and, more particularly, in the Eastern District of Texas. Sony may be served with service of process by serving a copy of the Complaint on its registered agent for service of process: Corporation Service Company, 701 Brazos Street, Suite 1050, Austin, TX 78701.

8. Upon information and belief, Defendant Acer Inc. ("Acer"), is, and at all relevant times mentioned herein was, a corporation organized and existing under the laws of the State of California, with its principal place of business at Acer America, 2641 Orchard Parkway San Jose, CA 95134. Acer manufactures for sale and/or sells personal computers to consumers in the United States and, more particularly, in the Eastern District of Texas. Acer may be served with service of process by serving a copy of the Complaint on its registered agent for service of process: CT Corp System, 350 N. St. Paul Street, Dallas, TX 75201.

9. Upon information and belief, Defendant MPC Computers LLC ("MPC"), is, and at all relevant times mentioned herein was, a corporation organized and existing under the laws of the State of Delaware, with its principal place of business at 906 East Karcher Road, Nampa, Idaho 83687. MPC manufactures for sale and/or sells personal computers to consumers in the United States and, more particularly, in the Eastern District of Texas. MPC may be served with service of process by serving a copy of the Complaint on its registered agent for service of process: Corporation Service Company, 701 Brazos Street, Suite 1050, Austin, TX 78701.

10. Upon information and belief, Defendant Systemax, Inc. ("Systemax"), is, and at all relevant times mentioned herein was, a corporation organized and existing under the laws of the State of Delaware, with its principal place of business at 11 Harbor Park Drive, Port Washington, NY 11050. Systemax manufactures for sale and/or sells personal computers to consumers in the United States and, more particularly, in the Eastern District of Texas.

Systemax may be served with service of process by serving a copy of the Complaint on its registered agent for service of process: Corporation Service Company, 1201 Hays Street, Tallahassee, FL 32301-2525.

11. Upon information and belief, Defendant Fujitsu America Inc. ("Fujitsu"), is, and at all relevant times mentioned herein was, a corporation organized and existing under the laws of the State of California, with its principal place of business at 1250 East Arques Avenue, Sunnyvale, CA 94085-5401. Fujitsu manufactures for sale and/or sells personal computers to consumers in the United States and, more particularly, in the Eastern District of Texas. Fujitsu may be served with service of process by serving a copy of the Complaint on its registered agent for service of process: CT Corporation System, 350 N. St. Paul Street, Dallas, TX 75201.

12. Upon information and belief, Defendant Micro Electronics Corporation ("Micro Electronics"), is, and at all relevant times mentioned herein was, a corporation organized and existing under the laws of the State of Delaware, with its principal place of business at 3375 Scott Blvd., Santa Clara, CA 95054-3110. Micro Electronics manufactures for sale and/or sells personal computers to consumers in the United States and, more particularly, in the Eastern District of Texas. Micro Electronics may be served with service of process by serving a copy of the Complaint on its registered agent for service of process: William D. Sauers, 150 Almaden Blvd., 15<sup>th</sup> Floor, San Jose, CA 95113.

13. Upon information and belief, Defendant Matsushita Electric Corporation of America ("Matsushita"), is, and at all relevant times mentioned herein was, a corporation organized and existing under the laws of the State of New Jersey, with its principal place of business at One Panasonic Way, Secaucus, NJ 07094. Matsushita manufactures for sale and/or sells personal computers to consumers in the United States and, more particularly, in the Eastern

District of Texas. Matsushita may be served with service of process by serving a copy of the Complaint on its registered agent for service of process: CT Corporation System, 350 N. St. Paul, Dallas, TX 75201.

14. Upon information and belief, Defendant Averatec, Inc. ("Averatec"), is, and at all relevant times mentioned herein was, a corporation organized and existing under the laws of the State of California, with its principal place of business at 80 Icon, Foothill Ranch, CA 92610. Averatec manufactures for sale and/or sells personal computers to consumers in the United States and, more particularly, in the Eastern District of Texas. Averatec may be served with service of process by serving a copy of the Complaint on its registered agent for service of process: Sebong Hong, 800 West Sixth St., Suite 1010, Los Angeles, CA 90017.

15. Upon information and belief, Defendant Polywell Company, Inc. ("Polywell"), is, and at all relevant times mentioned herein was, a corporation organized and existing under the laws of the State of California, with its principal place of business at 1461 San Mateo Avenue, South San Francisco, CA 94080. Polywell manufactures for sale and/or sells personal computers and workstations to consumers in the United States and, more particularly, in the Eastern District of Texas. Polywell may be served with service of process by serving a copy of the Complaint on its registered agent for service of process: Sam Chu, 1461 San Mateo Avenue, South San Francisco, CA 94080.

16. Upon information and belief, Defendant Sharp Electronics Corp. ("Sharp"), is, and at all relevant times mentioned herein was, a corporation organized and existing under the laws of the State of New York, with its principal place of business at Sharp Plaza, Mahwah, NJ 07430. Sharp manufactures for sale and/or sells personal computers to consumers in the United States and, more particularly, in the Eastern District of Texas. Sharp may be served with service

of process by serving a copy of the Complaint on its registered agent for service of process: CT Corporation System, 350 N. St. Paul, Dallas, Texas 75201.

17. Upon information and belief, Defendant Twinhead Corp. ("Twinhead"), is, and at all relevant times mentioned herein was, a corporation organized and existing under the laws of the State of New York, with its principal place of business at 48303 Fremont Blvd., Fremont, CA 94538. Twinhead manufactures for sale and/or sells personal computers to consumers in the United States and, more particularly, in the Eastern District of Texas. Twinhead may be served with service of process by serving a copy of the Complaint on its registered agent for service of process: Steven Gau, 48303 Fremont Blvd., Fremont, CA 94538.

18. Upon information and belief, Defendant Uniwill Computer International Corp. ("Uniwill"), is, and at all relevant times mentioned herein was, a corporation organized and existing under the laws of the State of California, with its principal place of business at 3358 Gateway Blvd., Fremont, CA 94538. Uniwill manufactures for sale and/or sells personal computers to consumers in the United States and, more particularly, in the Eastern District of Texas. Uniwill may be served with service of process by serving a copy of the Complaint on its registered agent for service of process: Robert Tsay, 3358 Gateway Blvd., Fremont, CA 94538.

19. Upon information and belief, Defendant JVC Americas Corp. ("JVC"), is, and at all relevant times mentioned herein was, a corporation organized and existing under the laws of the State of Delaware, with its principal place of business at 1700 Valley Road, Wayne, NJ 07470. JVC manufactures for sale and/or sells personal computers to consumers in the United States and, more particularly, in the Eastern District of Texas. JVC may be served with service of process by serving a copy of the Complaint on its registered agent for service of process: CT Corporation System, 350 N. St. Paul, Dallas, Texas 75201.

**JURISDICTION AND VENUE**

20. This is an action for patent infringement arising under the patent laws of the United States, Title 35, United States Code. This Court has exclusive subject matter jurisdiction over this case for patent infringement under 28 U.S.C. §1338(a).

21. This Court has personal jurisdiction over each Defendant. Each Defendant has conducted and does conduct business within the State of Texas. Each Defendant, directly or through intermediaries (including distributors, retailers, and others), ships, distributes, offers for sale, sells, and advertises (including the provision of an interactive web page) its products in the United States, the State of Texas, and the Eastern District of Texas. Each Defendant has purposefully and voluntarily placed one or more of its infringing products, as described below in Counts 1-7, into the stream of commerce with the expectation that they will be purchased by consumers in the Eastern District of Texas. These infringing products have been and continue to be purchased by consumers in the Eastern District of Texas. Each Defendant has committed the tort of patent infringement within the State of Texas and, more particularly, within the Eastern District of Texas.

22. Venue is proper in the Eastern District of Texas under 28 U.S.C. §§ 1391 and 1400(b).

**COUNT 1: INFRINGEMENT OF U.S. PATENT NO. 4,730,185**

23. AVG refers to and incorporates herein the allegations of Paragraphs 1-22 above.

24. United States Patent No. 4,730,185 (“the ’185 Patent”), entitled “Graphics Display Method and Apparatus for Color Dithering,” was duly and legally issued by the United States Patent and Trademark Office on March 8, 1988, after full and fair examination. AVG is



the assignee of all rights, title, and interest in and to the '185 Patent and possesses all rights of recovery under the '185 Patent.

25. Defendant HP manufactures and/or sells personal computers and workstations that have graphics subsystems that accelerate the process of writing blocks of pixel data to frame buffer memory. For example, the graphics subsystem in the HP Compaq D220M, and similar HP products, writes blocks of bitmap data and pattern data to frame buffer memory using the BitBLT or PatBLT functions of the GDI component of Microsoft Windows, with parameters, such as Source Copy ("SRCCOPY") and Pattern Copy ("PATCOPY").

26. Defendant Dell manufactures and/or sells personal computers and workstations that have graphics subsystems that accelerate the process of writing blocks of pixel data to frame buffer memory. For example, the graphics subsystem in the Dell Dimension 4600, and similar Dell products, writes blocks of bitmap data and pattern data to frame buffer memory using the BitBLT or PatBLT functions of the GDI component of Microsoft Windows, with parameters, such as SRCCOPY and PATCOPY.

27. Defendant Gateway manufactures and/or sells personal computers that have graphics subsystems that accelerate the process of writing blocks of pixel data to frame buffer memory. For example, the graphics subsystem in the Gateway E-4100, and similar Gateway products, writes blocks of bitmap data and pattern data to frame buffer memory using the BitBLT or PatBLT functions of the GDI component of Microsoft Windows, with parameters, such as SRCCOPY and PATCOPY.

28. Defendant IBM manufactures and/or sells personal computers and workstations that have graphics subsystems that accelerate the process of writing blocks of pixel data to frame buffer memory. For example, the graphics subsystem in the IBM ThinkCentre A30SMB, and

similar IBM products, writes blocks of bitmap data and pattern data to frame buffer memory using the BitBLT or PatBLT functions of the GDI component of Microsoft Windows, with parameters, such as SRCCOPY and PATCOPY.

29. Defendant Toshiba manufactures and/or sells personal computers that have graphics subsystems that accelerate the process of writing blocks of pixel data to frame buffer memory. For example, the graphics subsystem in the Tecra A2, and similar Toshiba products, writes blocks of bitmap data and pattern data to frame buffer memory using the BitBLT or PatBLT functions of the GDI component of Microsoft Windows, with parameters, such as SRCCOPY and PATCOPY.

30. Defendant Sony manufactures and/or sells personal computers that have graphics subsystems that accelerate the process of writing blocks of pixel data to frame buffer memory. For example, the graphics subsystem in the VAIO RA910G, and similar Sony products, writes blocks of bitmap data and pattern data to frame buffer memory using the BitBLT or PatBLT functions of the GDI component of Microsoft Windows, with parameters, such as SRCCOPY and PATCOPY.

31. Defendant Acer manufactures and/or sells personal computers that have graphics subsystems that accelerate the process of writing blocks of pixel data to frame buffer memory. For example, the graphics subsystem in the Travelmate 8000, and similar Acer products, writes blocks of bitmap data and pattern data to frame buffer memory using the BitBLT or PatBLT functions of the GDI component of Microsoft Windows, with parameters, such as SRCCOPY and PATCOPY.

32. Defendant MPC manufactures and/or sells personal computers that have graphics subsystems that accelerate the process of writing blocks of pixel data to frame buffer memory.

For example, the graphics subsystem in the ClientPro 345, and similar MPC products, writes blocks of bitmap data and pattern data to frame buffer memory using the BitBLT or PatBLT functions of the GDI component of Microsoft Windows, with parameters, such as SRCCOPY and PATCOPY.

33. Defendant Systemax manufactures and/or sells personal computers that have graphics subsystems that accelerate the process of writing blocks of pixel data to frame buffer memory. For example, the graphics subsystem in the Venture series, and similar Systemax products, writes blocks of bitmap data and pattern data to frame buffer memory using the BitBLT or PatBLT functions of the GDI component of Microsoft Windows, with parameters, such as SRCCOPY and PATCOPY.

34. Defendant Fujitsu manufactures and/or sells personal computers that have graphics subsystems that accelerate the process of writing blocks of pixel data to frame buffer memory. For example, the graphics subsystem in the LifeBook E8000, and similar Fujitsu products, writes blocks of bitmap data and pattern data to frame buffer memory using the BitBLT or PatBLT functions of the GDI component of Microsoft Windows, with parameters, such as SRCCOPY and PATCOPY.

35. Defendant Micro Electronics manufactures and/or sells personal computers that have graphics subsystems that accelerate the process of writing blocks of pixel data to frame buffer memory. For example, the graphics subsystem in the PowerSpec 9261, and similar Micro Electronics products, writes blocks of bitmap data and pattern data to frame buffer memory using the BitBLT or PatBLT functions of the GDI component of Microsoft Windows, with parameters, such as SRCCOPY and PATCOPY.

36. Defendant Matsushita manufactures and/or sells personal computers that have graphics subsystems that accelerate the process of writing blocks of pixel data to frame buffer memory. For example, the graphics subsystem in the Panasonic Toughbook 51, and similar Matsushita products, writes blocks of bitmap data and pattern data to frame buffer memory using the BitBLT or PatBLT functions of the GDI component of Microsoft Windows, with parameters, such as SRCCOPY and PATCOPY.

37. Defendant Averatec manufactures and/or sells personal computers that have graphics subsystems that accelerate the process of writing blocks of pixel data to frame buffer memory. For example, the graphics subsystem in the Averatec 6100 Series Mobile Notebook PC, and similar Averatec products, writes blocks of bitmap data and pattern data to frame buffer memory using the BitBLT or PatBLT functions of the GDI component of Microsoft Windows, with parameters, such as SRCCOPY and PATCOPY.

38. Defendant Polywell manufactures and/or sells personal computers and workstations that have graphics subsystems that accelerate the process of writing blocks of pixel data to frame buffer memory. For example, the graphics subsystem in the Poly 880NF2-2700, and similar Polywell products, writes blocks of bitmap data and pattern data to frame buffer memory using the BitBLT or PatBLT functions of the GDI component of Microsoft Windows, with parameters, such as SRCCOPY and PATCOPY.

39. Defendant Sharp manufactures and/or sells personal computers that have graphics subsystems that accelerate the process of writing blocks of pixel data to frame buffer memory. For example, the graphics subsystem in the Actius RD3D, and similar Sharp products, writes blocks of bitmap data and pattern data to frame buffer memory using the BitBLT or PatBLT

functions of the GDI component of Microsoft Windows, with parameters, such as SRCCOPY and PATCOPY.

40. Defendant Twinhead manufactures and/or sells personal computers that have graphics subsystems that accelerate the process of writing blocks of pixel data to frame buffer memory. For example, the graphics subsystem in the N15RB, and similar Twinhead products, writes blocks of bitmap data and pattern data to frame buffer memory using the BitBLT or PatBLT functions of the GDI component of Microsoft Windows, with parameters, such as SRCCOPY and PATCOPY.

41. Defendant Uniwill manufactures and/or sells personal computers that have graphics subsystems that accelerate the process of writing blocks of pixel data to frame buffer memory. For example, the graphics subsystem in the N258KA0 Notebook (AMD), and similar Uniwill products, writes blocks of bitmap data and pattern data to frame buffer memory using the BitBLT or PatBLT functions of the GDI component of Microsoft Windows, with parameters, such as SRCCOPY and PATCOPY.

42. Defendant JVC manufactures and/or sells personal computers that have graphics subsystems that accelerate the process of writing blocks of pixel data to frame buffer memory. For example, the graphics subsystem in the MP-XV841US, and similar JVC products, writes blocks of bitmap data and pattern data to frame buffer memory using the BitBLT or PatBLT functions of the GDI component of Microsoft Windows, with parameters, such as SRCCOPY and PATCOPY.

43. By virtue of the foregoing, each Defendant is infringing one or more claims of the '185 Patent under 35 U.S.C. § 271 by performing, without authority, one or more of the following acts: (a) making, using, offering to sell, and selling within the United States the

invention of one or more claims of the '185 Patent; (b) importing into the United States the invention of one or more claims of the '185 Patent; (c) inducing infringement of one or more claims of the '185 Patent; and (d) contributing to infringement of one or more claims of the '185 Patent.

44. AVG has at all times complied with 35 U.S.C. § 287.

45. Each Defendant has knowledge of the '185 Patent, and has not ceased its infringing activities. Each Defendant's infringement of the '185 Patent has been and continues to be willful and deliberate.

46. As a result of Defendants' acts of infringement, AVG has suffered and will continue to suffer damages in an amount to be proved at trial.

**COUNT 2: INFRINGEMENT OF U.S. PATENT NO. 5,132,670**

47. AVG refers to and incorporates herein the allegations of Paragraphs 1-22 above.

48. United States Patent No. 5,132,670 ("the '670 Patent"), entitled "System for Improving Two-Color Display Operations," was duly and legally issued by the United States Patent and Trademark Office on July 21, 1992, after full and fair examination. AVG is the assignee of all rights, title, and interest in and to the '670 Patent and possesses all rights of recovery under the '670 Patent.

49. Defendant HP manufactures and/or sells personal computers and workstations, such as the HP Compaq D220M, that have graphics subsystems that execute raster operations ("ROPs").

50. Defendant Dell manufactures and/or sells personal computers and workstations, such as the Dell Dimension 4600, that have graphics subsystems that execute ROPs.

51. Defendant Gateway manufactures and/or sells personal computers, such as the Gateway E-4100, that have graphics subsystems that execute ROPs.

52. Defendant IBM manufactures and/or sells personal computers and workstations, such as the ThinkCentre A30SMB, that have graphics subsystems that execute ROPs.

53. Defendant Toshiba manufactures and/or sells personal computers, such as the Tecra A2, that have graphics subsystems that execute ROPs.

54. Defendant Sony manufactures and/or sells personal computers, such as the VAIO RA910G, that have graphics subsystems that execute ROPs.

55. Defendant Acer manufactures and/or sells personal computers, such as the Travelmate 8000, that have graphics subsystems that execute ROPs.

56. Defendant MPC manufactures and/or sells personal computers, such as the ClientPro 345, that have graphics subsystems that execute ROPs.

57. Defendant Systemax manufactures and/or sells personal computers, such as Systemax Venture series, that have graphics subsystems that execute ROPs.

58. Defendant Fujitsu manufactures and/or sells personal computers, such as the LifeBook E8000, that have graphics subsystems that execute ROPs.

59. Defendant Micro Electronics manufactures and/or sells personal computers, such as the PowerSpec 9261, that have graphics subsystems that execute ROPs.

60. Defendant Matsushita manufactures and/or sells personal computers, such as the Panasonic Toughbook 51, that have graphics subsystems that execute ROPs.

61. Defendant Averatec manufactures and/or sells personal computers, such as the Averatec 6100 Series Mobile Notebook PC, that have graphics subsystems that execute ROPs.

62. Defendant Polywell manufactures and/or sells personal computers and workstations, such as the Poly 880NF2-2700, that have graphics subsystems that execute ROPs.

63. Defendant Sharp manufactures and/or sells personal computers, such as the Actius RD3D, that have graphics subsystems that execute ROPs.

64. Defendant Twinhead manufactures and/or sells personal computers, such as the N15RB, that have graphics subsystems that execute ROPs.

65. Defendant Uniwill manufactures and/or sells personal computers, such as the N258KA0 Notebook, that have graphics subsystems that execute ROPs.

66. Defendant JVC manufactures and/or sells personal computers, such as the MP-XV841US, that have graphics subsystems that execute ROPs.

67. By virtue of the foregoing, each Defendant is infringing one or more claims of the '670 Patent under 35 U.S.C. § 271 by performing, without authority, one or more of the following acts: (a) making, using, offering to sell, and selling within the United States the invention of one or more claims of the '670 Patent; (b) importing into the United States the invention of one or more claims of the '670 Patent; (c) inducing infringement of one or more claims of the '670 Patent; and (d) contributing to infringement of one or more claims of the '670 Patent.

68. AVG has at all times complied with 35 U.S.C. § 287.

69. Each Defendant has knowledge of the '670 Patent, and has not ceased its infringing activities. Each Defendant's infringement of the '670 Patent has been and continues to be willful and deliberate.

70. As a result of Defendants' acts of infringement, AVG has suffered and will continue to suffer damages in an amount to be proved at trial.



**COUNT 3: INFRINGEMENT OF U.S. PATENT NO. 5,109,520**

71. AVG refers to and incorporates herein the allegations of Paragraphs 1-22 above.

72. United States Patent No. 5,109,520 (“the ’520 Patent”), entitled “Image Frame Buffer Access Speedup By Providing Multiple Buffer Controllers Each Containing Command FIFO Buffers,” was duly and legally issued by the United States Patent and Trademark Office on April 28, 1992, after full and fair examination. AVG is the assignee of all rights, title, and interest in and to the ’520 Patent and possesses all rights of recovery under the ’520 Patent.

73. Defendant HP manufactures and/or sells personal computers and workstations, such as the HP Compaq Business Notebook nc8000, that include a graphics subsystem having multiple frame buffer memory controllers.

74. Defendant Dell manufactures and/or sells personal computers and workstations, such as the Dell Dimension XPS, that include a graphics subsystem having multiple frame buffer memory controllers.

75. Defendant Gateway manufactures and/or sells personal computers, such as the Gateway 450E Plus, that include a graphics subsystem having multiple frame buffer memory controllers.

76. Defendant IBM manufactures and/or sells personal computers and workstations, such as the Intellistation A Pro – Economy, that include a graphics subsystem having multiple frame buffer memory controllers.

77. Defendant Toshiba manufactures and/or sells personal computers, such as the Toshiba Satellite P25-S676 and Tecra M2 family of notebook computers, that include a graphics subsystem having multiple frame buffer memory controllers.

78. Defendant Sony manufactures and/or sells personal computers, such as the VAIO RA910G, that include a graphics subsystem having multiple frame buffer memory controllers.

79. Defendant Acer manufactures and/or sells personal computers, such as the Travelmate 8000, that include a graphics subsystem having multiple frame buffer memory controllers.

80. Defendant MPC manufactures and/or sells personal computers, such as the ClientPro 345, that include a graphics subsystem having multiple frame buffer memory controllers.

81. Defendant Systemax manufactures and/or sells personal computers, such as the Venture HU32, that include a graphics subsystem having multiple frame buffer memory controllers.

82. Defendant Fujitsu manufactures and/or sells personal computers, such as the LifeBook E8000, that include a graphics subsystem having multiple frame buffer memory controllers.

83. Defendant Micro Electronics manufactures and/or sells personal computers, such as the WinBook W Series, that include a graphics subsystem having multiple frame buffer memory controllers.

84. Defendant Matsushita manufactures and/or sells personal computers, such as the Panasonic Toughbook 51, that include a graphics subsystem having multiple frame buffer memory controllers.

85. Defendant Averatec manufactures and/or sells personal computers, such as the Averatec 6100 Series Mobile Notebook PC, that include a graphics subsystem having multiple frame buffer memory controllers.

86. Defendant Polywell manufactures and/or sells personal computers and workstations, such as the Poly 880NF2-2700, that include a graphics subsystem having multiple frame buffer memory controllers.

87. Defendant Sharp manufactures and/or sells personal computers, such as the Actius RD3D, that include a graphics subsystem having multiple frame buffer memory controllers.

88. Defendant Twinhead manufactures and/or sells personal computers, such as the N15RB, that include a graphics subsystem having multiple frame buffer memory controllers.

89. Defendant Uniwill manufactures and/or sells personal computers, such as the N258KA0 Notebook, that include a graphics subsystem having multiple frame buffer memory controllers.

90. By virtue of the foregoing, each Defendant identified in Paragraphs 73-89 is infringing one or more claims of the '520 Patent under 35 U.S.C. § 271 by performing, without authority, one or more of the following acts: (a) making, using, offering to sell, and selling within the United States the invention of one or more claims of the '520 Patent; (b) importing into the United States the invention of one or more claims of the '520 Patent; and (c) inducing infringement of one or more claims of the '520 Patent.

91. AVG has at all times complied with 35 U.S.C. § 287.

92. Each Defendant identified in Paragraphs 73-89 has knowledge of the '520 Patent, and has not ceased its infringing activities. Each such Defendant's infringement of the '520 Patent has been and continues to be willful and deliberate.

93. As a result of the aforementioned Defendants' acts of infringement, AVG has suffered and will continue to suffer damages in an amount to be proved at trial.

**COUNT 4: INFRINGEMENT OF U.S. PATENT NO. 4,742,474**

94. AVG refers to and incorporates herein the allegations of Paragraphs 1-22 above.

95. United States Patent No. 4,742,474 (“the ’474 Patent”), entitled “Variable Access Frame Buffer Memory,” was duly and legally issued by the United States Patent and Trademark Office on May 3, 1988, after full and fair examination. AVG is the assignee of all rights, title, and interest in and to the ’474 Patent and possesses all rights of recovery under the ’474 Patent.

96. Defendant HP manufactures and/or sells personal computers and workstations, such as the HP Compaq D220M, with graphics subsystems that implement VGA mode, under which frame buffer memory is addressable on a per-plane or per-pixel basis.

97. Defendant Dell manufactures and/or sells personal computers and workstations, such as the Dell Dimension 4600, with graphics subsystems that implement VGA mode, under which frame buffer memory is addressable on a per-plane or per-pixel basis.

98. Defendant Gateway manufactures and/or sells personal computers, such as the Gateway E-4100, with graphics subsystems that implement VGA mode, under which frame buffer memory is addressable on a per-plane or per-pixel basis.

99. Defendant IBM manufactures and/or sells personal computers and workstations, such as the IBM ThinkCentre A30SMB, with graphics subsystems that implement VGA mode, under which frame buffer memory is addressable on a per-plane or per-pixel basis.

100. Defendant Toshiba manufactures and/or sells personal computers, such as the Tecra A2, with graphics subsystems that implement VGA mode, under which frame buffer memory is addressable on a per-plane or per-pixel basis.

101. Defendant Sony manufactures and/or sells personal computers, such as the VAIO RA910G, with graphics subsystems that implement VGA mode, under which frame buffer memory is addressable on a per-plane or per-pixel basis.

102. Defendant Acer manufactures and/or sells personal computers, such as the Travelmate 8000, with graphics subsystems that implement VGA mode, under which frame buffer memory is addressable on a per-plane or per-pixel basis.

103. Defendant MPC manufactures and/or sells personal computers, such as the ClientPro 345, with graphics subsystems that implement VGA mode, under which frame buffer memory is addressable on a per-plane or per-pixel basis.

104. Defendant Systemax manufactures and/or sells personal computers, such as the Systemax Venture series, with graphics subsystems that implement VGA mode, under which frame buffer memory is addressable on a per-plane or per-pixel basis.

105. Defendant Fujitsu manufactures and/or sells personal computers, such as the LifeBook E8000, with graphics subsystems that implement VGA mode, under which frame buffer memory is addressable on a per-plane or per-pixel basis.

106. Defendant Micro Electronics manufactures and/or sells personal computers, such as the PowerSpec 9261, with graphics subsystems that implement VGA mode, under which frame buffer memory is addressable on a per-plane or per-pixel basis.

107. Defendant Matsushita manufactures and/or sells personal computers, such as the Panasonic Toughbook 51, with graphics subsystems that implement VGA mode, under which frame buffer memory is addressable on a per-plane or per-pixel basis.

108. Defendant Averatec manufactures and/or sells personal computers, such as the Averatec 6100 Series Mobile Notebook PC, with graphics subsystems that implement VGA mode, under which frame buffer memory is addressable on a per-plane or per-pixel basis.

109. Defendant Polywell manufactures and/or sells personal computers and workstations, such as the Poly 880NF2-2700, with graphics subsystems that implement VGA mode, under which frame buffer memory is addressable on a per-plane or per-pixel basis.

110. Defendant Sharp manufactures and/or sells personal computers, such as the Actius RD3D, with graphics subsystems that implement VGA mode, under which frame buffer memory is addressable on a per-plane or per-pixel basis.

111. Defendant Twinhead manufactures and/or sells personal computers, such as the N15RB, with graphics subsystems that implement VGA mode, under which frame buffer memory is addressable on a per-plane or per-pixel basis.

112. Defendant Uniwill manufactures and/or sells personal computers, such as the N258KA0 Notebook, with graphics subsystems that implement VGA mode, under which frame buffer memory is addressable on a per-plane or per-pixel basis.

113. Defendant JVC manufactures and/or sells personal computers, such as the MP-XV841US, with graphics subsystems that implement VGA mode, under which frame buffer memory is addressable on a per-plane or per-pixel basis.

114. By virtue of the foregoing, each Defendant is infringing one or more claims of the '474 Patent under 35 U.S.C. § 271 by performing, without authority, one or more of the following acts: (a) making, using, offering to sell, and selling within the United States the invention of one or more claims of the '474 Patent; (b) importing into the United States the invention of one or more claims of the '474 Patent; and (c) inducing infringement of one or more claims of the '474 Patent.

115. AVG has at all times complied with 35 U.S.C. § 287.

116. Each Defendant has knowledge of the '474 Patent, and has not ceased its infringing activities. Each such Defendant's infringement of the '474 Patent has been and continues to be willful and deliberate.

117. As a result of the aforementioned Defendants' acts of infringement, AVG has suffered and will continue to suffer damages in an amount to be proved at trial.

**COUNT 5: INFRINGEMENT OF U.S. PATENT NO. 4,694,286**

118. AVG refers to and incorporates herein the allegations of Paragraphs 1-22 above.

119. United States Patent No. 4,694,286 ("the '286 Patent"), entitled "Apparatus and Method for Modifying Displayed Color Images," was duly and legally issued by the United States Patent and Trademark Office on September 15, 1987, after full and fair examination. AVG is the assignee of all rights, title, and interest in and to the '286 Patent and possesses all rights of recovery under the '286 Patent.

120. Defendant HP manufactures and/or sells personal computers and workstations that include a Windows operating system. For example, the HP Compaq D220M, and similar HP products, use Windows XP, which includes software for modifying the color of pixels in a color image by enabling a user to (i) select a pixel in the image, (ii) enter new HLS (hue, lightness and saturation) values to specify a new color, and (iii) modify the selected pixel, and all pixels in the image associated with that pixel, to the newly specified color.

121. Defendant Dell manufactures and/or sells personal computers and workstations that include a Windows operating system. For example, the Dell Dimension 4600, and similar Dell products, use Windows XP, which includes software for modifying the color of pixels in a color image by enabling a user to (i) select a pixel in the image, (ii) enter new HLS values to specify a new color, and (iii) modify the selected pixel, and all pixels in the image associated with that pixel, to the newly specified color. Dell also includes and/or sells along with its

personal computers and workstations image-editing software that modifies pixel colors in the same way as its operating system, such as Adobe Photoshop Elements 2.0, Adobe Creative Suite Premium 1.1 for Windows (which includes Adobe Photoshop CS), Adobe Photoshop CS 8.0, CorelDRAW Suite 12 (which includes Corel PhotoPAINT 12), JASC Paint Shop Pro 8, and Macromedia Studio MX 2004 (which includes Macromedia Fireworks MX).

122. Defendant Gateway manufactures and/or sells personal computers that include a Windows operating system. For example, the Gateway E-4100, and similar Gateway products, use Windows XP, which includes software for modifying the color of pixels in a color image by enabling a user to (i) select a pixel in the image, (ii) enter new HLS values to specify a new color, and (iii) modify the selected pixel, and all pixels in the image associated with that pixel, to the newly specified color. Gateway also includes and/or sells along with its personal computers image-editing software that modifies pixel colors in the same way as its operating system, such as CorelDRAW Suite 12 (which includes Corel PhotoPAINT 12), Adobe Photoshop Elements 2.0, and Adobe Photoshop CS 8.0.

123. Defendant IBM manufactures and/or sells personal computers and workstations that include a Windows operating system. For example, the IBM ThinkCentre A30SMB, and similar IBM products, use Windows XP, which includes software for modifying the color of pixels in a color image by enabling a user to (i) select a pixel in the image, (ii) enter new HLS values to specify a new color, and (iii) modify the selected pixel, and all pixels in the image associated with that pixel, to the newly specified color. IBM also includes and/or sells with its personal computers and workstations image-editing software that modifies pixel colors in the same way as its operating system, such as CorelDRAW Suite 12 (which includes Corel PhotoPAINT 12) and Adobe Photoshop Elements 2.0.



124. Defendant Toshiba manufactures and/or sells personal computers that include a Windows operating system. For example, the Tecra A2, and similar Toshiba products, use Windows XP, which includes software for modifying the color of pixels in a color image by enabling a user to (i) select a pixel in the image, (ii) enter new HLS values to specify a new color, and (iii) modify the selected pixel, and all pixels in the image associated with that pixel, to the newly specified color. Toshiba also includes and/or sells with its personal computers image-editing software that modifies pixel colors in the same way as its operating system, such as Adobe Photoshop Elements 2.0 and Adobe Photoshop CS.

125. Defendant Sony manufactures and/or sells personal computers that include a Windows operating system. For example, the VAIO RA910G, and similar Sony products, use Windows XP, which includes software for modifying the color of pixels in a color image by enabling a user to (i) select a pixel in the image, (ii) enter new HLS values to specify a new color, and (iii) modify the selected pixel, and all pixels in the image associated with that pixel, to the newly specified color. Sony also includes and/or sells along with its personal computers image-editing software that modifies pixel colors in the same way as its operating system, such as Adobe Photoshop Elements 2.0.

126. Defendant Acer manufactures and/or sells personal computers that include a Windows operating system. For example, the Travelmate 8000, and similar Acer products, use Windows XP, which includes software for modifying the color of pixels in a color image by enabling a user to (i) select a pixel in the image, (ii) enter new HLS values to specify a new color, and (iii) modify the selected pixel, and all pixels in the image associated with that pixel, to the newly specified color.

127. Defendant MPC manufactures and/or sells personal computers that include a Windows operating system. For example, the ClientPro 345, and similar MPC products, use Windows XP, which includes software for modifying the color of pixels in a color image by enabling a user to (i) select a pixel in the image, (ii) enter new HLS values to specify a new color, and (iii) modify the selected pixel, and all pixels in the image associated with that pixel, to the newly specified color.

128. Defendant Systemax manufactures and/or sells personal computers that include a Windows operating system. For example, the Systemax Venture series, and similar Systemax products, use Windows XP, which includes software for modifying the color of pixels in a color image by enabling a user to (i) select a pixel in the image, (ii) enter new HLS values to specify a new color, and (iii) modify the selected pixel, and all pixels in the image associated with that pixel, to the newly specified color.

129. Defendant Fujitsu manufactures and/or sells personal computers that include a Windows operating system. For example, the LifeBook E8000, and similar Fujitsu products, use Windows XP, which includes software for modifying the color of pixels in a color image by enabling a user to (i) select a pixel in the image, (ii) enter new HLS values to specify a new color, and (iii) modify the selected pixel, and all pixels in the image associated with that pixel, to the newly specified color.

130. Defendant Micro Electronics manufactures and/or sells personal computers that include a Windows operating system. For example, the PowerSpec 9261, and similar Micro Electronics products, use Windows XP, which includes software for modifying the color of pixels in a color image by enabling a user to (i) select a pixel in the image, (ii) enter new HLS values to specify a new color, and (iii) modify the selected pixel, and all pixels in the image

associated with that pixel, to the newly specified color. Micro Electronics also includes and/or sells with its personal computers image-editing software that modifies pixel colors in the same way as its operating system, such as Adobe Photoshop 7.0.

131. Defendant Matsushita manufactures and/or sells personal computers that include a Windows operating system. For example, the Panasonic Toughbook 51, and similar Matsushita products, use Windows XP, which includes software for modifying the color of pixels in a color image by enabling a user to (i) select a pixel in the image, (ii) enter new HLS values to specify a new color, and (iii) modify the selected pixel, and all pixels in the image associated with that pixel, to the newly specified color.

132. Defendant Averatec manufactures and/or sells personal computers that include a Windows operating system. For example, the Averatec 6100 Series Mobile Notebook PC, and similar Averatec products, use Windows XP, which includes software for modifying the color of pixels in a color image by enabling a user to (i) select a pixel in the image, (ii) enter new HLS values to specify a new color, and (iii) modify the selected pixel, and all pixels in the image associated with that pixel, to the newly specified color.

133. Defendant Polywell manufactures and/or sells personal computers and workstations that include a Windows operating system. For example, the Poly 880NF2-2700, and similar Polywell products, use Windows XP, which includes software for modifying the color of pixels in a color image by enabling a user to (i) select a pixel in the image, (ii) enter new HLS values to specify a new color, and (iii) modify the selected pixel, and all pixels in the image associated with that pixel, to the newly specified color. Polywell also includes and/or sells along with its personal computers image-editing software that modifies pixel colors in the same way as its operating system, such as Adobe Photoshop SE.

134. Defendant Sharp manufactures and/or sells personal computers that include a Windows operating system. For example, the Actius RD3D, and similar Sharp products, use Windows XP, which includes software for modifying the color of pixels in a color image by enabling a user to (i) select a pixel in the image, (ii) enter new HLS values to specify a new color, and (iii) modify the selected pixel, and all pixels in the image associated with that pixel, to the newly specified color.

135. Defendant Twinhead manufactures and/or sells personal computers that include a Windows operating system. For example, the N15RB, and similar Twinhead products, use Windows XP, which includes software for modifying the color of pixels in a color image by enabling a user to (i) select a pixel in the image, (ii) enter new HLS values to specify a new color, and (iii) modify the selected pixel, and all pixels in the image associated with that pixel, to the newly specified color.

136. Defendant Uniwill manufactures and/or sells personal computers that include a Windows operating system. For example, the N258KA0 Notebook, and similar Uniwill products, use Windows XP, which includes software for modifying the color of pixels in a color image by enabling a user to (i) select a pixel in the image, (ii) enter new HLS values to specify a new color, and (iii) modify the selected pixel, and all pixels in the image associated with that pixel, to the newly specified color.

137. Defendant JVC manufactures and/or sells personal computers that include a Windows operating system. For example, the MP-XV841US, and similar JVC products, use Windows XP, which includes software for modifying the color of pixels in a color image by enabling a user to (i) select a pixel in the image, (ii) enter new HLS values to specify a new

color, and (iii) modify the selected pixel, and all pixels in the image associated with that pixel, to the newly specified color.

138. By virtue of the foregoing, each Defendant is infringing one or more claims of the '286 Patent under 35 U.S.C. § 271 by performing, without authority, one or more of the following acts: (a) making, using, offering to sell, and selling within the United States the invention of one or more claims of the '286 Patent; (b) importing into the United States the invention of one or more claims of the '286 Patent; and (c) inducing infringement of one or more claims of the '286 Patent.

139. AVG has at all times complied with 35 U.S.C. § 287.

140. Each Defendant has knowledge of the '286 Patent, and has not ceased its infringing activities. Each Defendant's infringement of the '286 Patent has been and continues to be willful and deliberate.

141. As a result of Defendants' acts of infringement, AVG has suffered and will continue to suffer damages in an amount to be proved at trial.

**COUNT 6: INFRINGEMENT OF U.S. PATENT NO. 4,761,642**

142. AVG refers to and incorporates herein the allegations of Paragraphs 1-22 above.

143. United States Patent No. 4,761,642 ("the '642 Patent"), entitled "System for Providing Data Communication Between a Computer Terminal and a Plurality of Concurrent Processes Running on a Multiple Process Computer," was duly and legally issued by the United States Patent and Trademark Office on August 2, 1988, after full and fair examination. AVG is the assignee of all rights, title, and interest in and to the '642 Patent and possesses all rights of recovery under the '642 Patent.

144. Defendant HP manufactures and/or sells personal computers and workstations that include Microsoft's Windows XP operating system and Internet Explorer browser. The HP

Compaq D220M, and similar HP products, are used to display output from concurrent processes, including concurrent Internet Explorer processes, in multiple operating system windows.

145. Defendant Dell manufactures and/or sells personal computers and workstations that include Microsoft's Windows XP operating system and Internet Explorer browser. The Dell Dimension 4600, and similar Dell products, are used to display output from concurrent processes, including concurrent Internet Explorer processes, in multiple operating system windows.

146. Defendant Gateway manufactures and/or sells personal computers that include Microsoft's Windows XP operating system and Internet Explorer browser. The Gateway E-4100, and similar Gateway products, are used to display output from concurrent processes, including concurrent Internet Explorer processes, in multiple operating system windows.

147. Defendant IBM manufactures and/or sells personal computers and workstations that include Microsoft's Windows XP operating system and Internet Explorer browser. The IBM ThinkCentre A30SMB, and similar IBM products, are used to display output from concurrent processes, including concurrent Internet Explorer processes, in multiple operating system windows.

148. Defendant Toshiba manufactures and/or sells personal computers that include Microsoft's Windows XP operating system and Internet Explorer browser. The Tecra A2, and similar Toshiba products, are used to display output from concurrent processes, including concurrent Internet Explorer processes, in multiple operating system windows.

149. Defendant Sony manufactures and/or sells personal computers that include Microsoft's Windows XP operating system and Internet Explorer browser. The VAIO RA910G,

and similar Sony products, are used to display output from concurrent processes, including concurrent Internet Explorer processes, in multiple operating system windows.

150. Defendant Acer manufactures and/or sells personal computers that include Microsoft's Windows XP operating system and Internet Explorer browser. The Travelmate 8000, and similar Acer products, are used to display output from concurrent processes, including concurrent Internet Explorer processes, in multiple operating system windows.

151. Defendant MPC manufactures and/or sells personal computers that include Microsoft's Windows XP operating system and Internet Explorer browser. The ClientPro 345, and similar MPC products, are used to display output from concurrent processes, including concurrent Internet Explorer processes, in multiple operating system windows.

152. Defendant Systemax manufactures and/or sells personal computers that include Microsoft's Windows XP operating system and Internet Explorer browser. The Systemax Venture Series, and similar Systemax products, are used to display output from concurrent processes, including concurrent Internet Explorer processes, in multiple operating system windows.

153. Defendant Fujitsu manufactures and/or sells personal computers that include Microsoft's Windows XP operating system and Internet Explorer browser. The LifeBook E8000, and similar Fujitsu products, are used to display output from concurrent processes, including concurrent Internet Explorer processes, in multiple operating system windows.

154. Defendant Micro Electronics manufactures and/or sells personal computers that include Microsoft's Windows XP operating system and Internet Explorer browser. The PowerSpec 9261, and similar Micro Electronics products, are used to display output from

concurrent processes, including concurrent Internet Explorer processes, in multiple operating system windows.

155. Defendant Matsushita manufactures and/or sells personal computers that include Microsoft's Windows XP operating system and Internet Explorer browser. The Panasonic Toughbook 51, and similar Matsushita products, are used to display output from concurrent processes, including concurrent Internet Explorer processes, in multiple operating system windows.

156. Defendant Averatec manufactures and/or sells personal computers that include Microsoft's Windows XP operating system and Internet Explorer browser. The Averatec 6100 Series Mobile Notebook PC, and similar Averatec products, are used to display output from concurrent processes, including concurrent Internet Explorer processes, in multiple operating system windows.

157. Defendant Polywell manufactures and/or sells personal computers and workstations that include Microsoft's Windows XP operating system and Internet Explorer browser. The Poly 880NF2-2700, and similar Polywell products, are used to display output from concurrent processes, including concurrent Internet Explorer processes, in multiple operating system windows.

158. Defendant Sharp manufactures and/or sells personal computers that include Microsoft's Windows XP operating system and Internet Explorer browser. The Actius RD3D, and similar Sharp products, are used to display output from concurrent processes, including concurrent Internet Explorer processes, in multiple operating system windows.

159. Defendant Twinhead manufactures and/or sells personal computers that include Microsoft's Windows XP operating system and Internet Explorer browser. The N15RB, and



similar Twinhead products, are used to display output from concurrent processes, including concurrent Internet Explorer processes, in multiple operating system windows.

160. Defendant Uniwill manufactures and/or sells personal computers that include Microsoft's Windows XP operating system and Internet Explorer browser. The N258KA0 Notebook, and similar Uniwill products, are used to display output from concurrent processes, including concurrent Internet Explorer processes, in multiple operating system windows.

161. Defendant JVC manufactures and/or sells personal computers that include Microsoft's Windows XP operating system and Internet Explorer browser. The MP-XV841US, and similar JVC products, are used to display output from concurrent processes, including concurrent Internet Explorer processes, in multiple operating system windows.

162. By virtue of the foregoing, each Defendant is infringing one or more claims of the '642 Patent under 35 U.S.C. § 271 by performing, without authority, one or more of the following acts: (a) making, using, offering to sell, and selling within the United States the invention of one or more claims of the '642 Patent; (b) importing into the United States the invention of one or more claims of the '642 Patent; and (c) inducing infringement of one or more claims of the '642 Patent.

163. AVG has at all times complied with 35 U.S.C. § 287.

164. Each Defendant has knowledge of the '642 Patent, and has not ceased its infringing activities. Each Defendant's infringement of the '642 Patent has been and continues to be willful and deliberate.

165. As a result of Defendants' acts of infringement, AVG has suffered and will continue to suffer damages in an amount to be proved at trial.

**COUNT 7: INFRINGEMENT OF U.S. PATENT NO. 4,734,690**

166. AVG refers to and incorporates herein the allegations of Paragraphs 1-22 above.

167. United States Patent No. 4,734,690 (“the ’690 Patent”), entitled “Method and Apparatus for Spherical Panning,” was duly and legally issued by the United States Patent and Trademark Office on March 29, 1988, after full and fair examination. AVG is the assignee of all rights, title, and interest in and to the ’690 Patent and possesses all rights of recovery under the ’690 Patent.

168. Defendant HP manufactures and/or sells personal computers and workstations, such as the HP Compaq D220M, which include the DirectX, Direct 3D and/or OpenGL application program interfaces and graphics subsystems that hardware accelerate three-dimensional (“3-D”) operations, and which may include a display.

169. Defendant Dell manufactures and/or sells personal computers and workstations, such as the Dell Dimension 4600, which include the DirectX, Direct 3D and/or OpenGL application program interfaces and graphics subsystems that hardware accelerate 3-D operations, and which may include a display.

170. Defendant Gateway manufactures and/or sells personal computers, such as the Gateway E-4100, which include the DirectX, Direct 3D and/or OpenGL application program interfaces and graphics subsystems that hardware accelerate 3-D operations, and which may include a display.

171. Defendant IBM manufactures and/or sells personal computers and workstations, such as the IBM ThinkCentre A30SMB which include the DirectX, Direct 3D and/or OpenGL application program interfaces and graphics subsystems that hardware accelerate 3-D operations, and which may include a display.

172. Defendant Toshiba manufactures and/or sells personal computers, such as the Tecra A2, which include the DirectX, Direct 3D and/or OpenGL application program interfaces and graphics subsystems that hardware accelerate 3-D operations, and which may include a display.

173. Defendant Sony manufactures and/or sells personal computers, such as the VAIO RA910G, which include the DirectX, Direct 3D and/or OpenGL application program interfaces and graphics subsystems that hardware accelerate 3-D operations, and which may include a display.

174. Defendant Acer manufactures and/or sells personal computers, such as the Travelmate 8000, which include the DirectX, Direct 3D and/or OpenGL application program interfaces and graphics subsystems that hardware accelerate 3-D operations, and which may include a display.

175. Defendant MPC manufactures and/or sells personal computers, such as the ClientPro 345, which include the DirectX, Direct 3D and/or OpenGL application program interfaces and graphics subsystems that hardware accelerate 3-D operations, and which may include a display.

176. Defendant Systemax manufactures and/or sells personal computers, such as the Systemax Venture HU32, which include the DirectX, Direct 3D and/or OpenGL application program interfaces and graphics subsystems that hardware accelerate 3-D operations, and which may include a display.

177. Defendant Fujitsu manufactures and/or sells personal computers, such as the LifeBook E8000, which include the DirectX, Direct 3D and/or OpenGL application program

interfaces and graphics subsystems that hardware accelerate 3-D operations, and which may include a display.

178. Defendant Micro Electronics manufactures and/or sells personal computers, such as the PowerSpec 9261, which include the DirectX, Direct 3D and/or OpenGL application program interfaces and graphics subsystems that hardware accelerate 3-D operations, and which may include a display.

179. Defendant Matsushita manufactures and/or sells personal computers, such as the Panasonic Toughbook 51, which include the DirectX, Direct 3D and/or OpenGL application program interfaces and graphics subsystems that hardware accelerate 3-D operations, and which may include a display.

180. Defendant Averatec manufactures and/or sells personal computers, such as the Averatec 6100 Series Mobile Notebook PC, which include the DirectX, Direct 3D and/or OpenGL application program interfaces and graphics subsystems that hardware accelerate 3-D operations, and which may include a display.

181. Defendant Polywell manufactures and/or sells personal computers and workstations, such as the Poly 880NF2-2700, which include the DirectX, Direct 3D and/or OpenGL application program interfaces and graphics subsystems that hardware accelerate 3-D operations, and which may include a display.

182. Defendant Sharp manufactures and/or sells personal computers, such as the Actius RD3D, which include the DirectX, Direct 3D and/or OpenGL application program interfaces and graphics subsystems that hardware accelerate 3-D operations, and which may include a display.

183. Defendant Twinhead manufactures and/or sells personal computers, such as the N15RB, which include the DirectX, Direct 3D and/or OpenGL application program interfaces and graphics subsystems that hardware accelerate 3-D operations, and which may include a display.

184. Defendant Uniwill manufactures and/or sells personal computers, such as the N258KA0 Notebook, which include the DirectX, Direct 3D and/or OpenGL application program interfaces and graphics subsystems that hardware accelerate 3-D operations, and which may include a display.

185. Defendant JVC manufactures and/or sells personal computers, such as the MP-XV841US, which include the DirectX, Direct 3D and/or OpenGL application program interfaces and graphics subsystems that hardware accelerate 3-D operations, and which may include a display.

186. By virtue of the foregoing, each Defendant is infringing one or more claims of the '690 Patent under 35 U.S.C. § 271 by performing, without authority, one or more of the following acts: (a) making, using, offering to sell, and selling within the United States the invention of one or more claims of the '690 Patent; (b) importing into the United States the invention of one or more claims of the '690 Patent; (c) inducing infringement of one or more claims of the '690 Patent; and (d) contributing to the infringement of one or more claims of the '690 Patent.

187. AVG has at all times complied with 35 U.S.C. § 287.

188. Each Defendant has knowledge of the '690 Patent, and has not ceased its infringing activities. Each Defendant's infringement of the '690 Patent has been and continues to be willful and deliberate.

189. As a result of Defendants' acts of infringement, AVG has suffered and will continue to suffer damages in an amount to be proved at trial.

**PRAYER FOR RELIEF**

AVG prays for the following relief:

A. A judgment that each Defendant has infringed the Patents-in-Suit as alleged herein, directly and/or indirectly by way of inducing or contributing to infringement of the Patents-in-Suit, as alleged herein;

B. A judgment and order requiring each Defendant to pay AVG damages under 35 U.S.C. § 284, including treble damages for willful infringement as provided by 35 U.S.C. § 284, and supplemental damages for any continuing post-verdict infringement up until entry of the final Judgment with an accounting as needed;

C. A judgment and order requiring each Defendant to pay AVG pre-judgment and post-judgment interest on the damages awarded;

D. A judgment and order finding this to be an exceptional case and requiring each Defendant to pay the costs of this action (including all disbursements) and attorneys' fees as provided by 35 U.S.C. § 285;

E. A judgment and order that each Defendant, its agents, employees, representatives, successors and assigns, and those acting in privity or in concert with them, be permanently enjoined from further infringement of the '670 Patent-in-Suit; and that each Defendant identified in Paragraphs 73-89, its agents, employees, representatives, successors and assigns, and those acting in privity or in concert with them, be permanently enjoined from further infringement of the '520 Patent-in-Suit; and

F. Such other and further relief as the Court deems just and equitable.

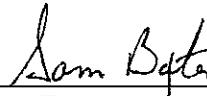
**DEMAND FOR JURY TRIAL**

AVG hereby demands that all issues be determined by jury.

DATED: August 23, 2004.

Respectfully submitted,

**McKOOL SMITH, P.C.**



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